

**IN THE CLAIMS:**

Please cancel claims 1-4, 11, 27-30, and 54, amend claims 5-10, 31-33, and 51-53, and add new claims 60-62, as set forth below.

Claims 1-4 (Canceled)

5. (Currently Amended) A method comprising:  
determining a criticality of a next-in-line  $\mu$ OP of a front-door stream, the front-door stream including  $\mu$ OPs received from a scheduler and a replay loop; and  
if the next-in-line front-door  $\mu$ OP is not critical, ~~whacking~~ placing the next-in-line front-door  $\mu$ OP into the replay loop and placing a next-in-line  $\mu$ OP of a side-door stream into an execution stream; and  
if the next-in-line front-door  $\mu$ OP is critical, placing the next-in-line front-door  $\mu$ OP into the execution stream and holding the next-in-line side-door  $\mu$ OP.

6. (Currently Amended) The method of claim 5, ~~further comprising:~~  
~~if the next in line front door  $\mu$ OP is critical, placing the next in line front door  $\mu$ OP into the execution stream and holding the next in line side door  $\mu$ OP~~ wherein the determination of the criticality of the next-in-line front door  $\mu$ OP is based on one or more metrics selected from a group consisting of an age of the next-in-line front door  $\mu$ OP and a priority of a thread associated with the next-in-line front door  $\mu$ OP.

7. (Currently Amended) The method of ~~claim 6~~ claim 5, wherein holding the next-in-line side-door  $\mu$ OP comprises holding the next-in-line side-door  $\mu$ OP until a next clock cycle.

8. (Currently Amended) A method comprising:  
examining whether there is contention for an entry slot into an execution stream;  
examining a criticality of a next-in-line  $\mu$ OP of a front-door stream if there is contention  
at the entry slot, the front-door stream including  $\mu$ OPs received from a scheduler  
and a replay loop; and  
if the next-in-line front-door  $\mu$ OP is not critical, ~~discarding~~ placing the next-in-line front-door  $\mu$ OP into the replay loop and placing a next-in-line  $\mu$ OP of a side-door stream into the entry slot; and  
if the next-in-line front-door  $\mu$ OP is critical, placing the next-in-line front-door  $\mu$ OP into the entry slot and holding the next-in-line side-door  $\mu$ OP.

9. (Currently Amended) The method of claim 8, ~~further comprising:~~  
~~if the next-in-line front-door  $\mu$ OP is critical, placing the next-in-line front-door  $\mu$ OP into the entry slot and holding the next-in-line side-door  $\mu$ OP~~ wherein the criticality of the next-in-line front door  $\mu$ OP is based on one or more metrics selected from a group consisting of an age of the next-in-line front door  $\mu$ OP and a priority of a thread associated with the next-in-line front door  $\mu$ OP.

10. (Currently Amended) The method of ~~claim 9~~ claim 8, wherein holding the next-in-line side-door  $\mu$ OP comprises holding the next-in-line side-door  $\mu$ OP until a next clock cycle.

11. (Canceled)

12. (Original) The method of claim 8, further comprising placing a pending  $\mu$ OP into the entry slot if there is no contention for the entry slot, the pending  $\mu$ OP comprising a next-in-line  $\mu$ OP of one of the front-door stream and the side-door stream.

13. (Withdrawn) A method comprising:  
accessing a next-in-line  $\mu$ OP of an input stream;  
applying a metric to the next-in-line  $\mu$ OP; and  
if the next-in-line  $\mu$ OP satisfies the metric, identifying the next-in-line  $\mu$ OP as critical.

14. (Withdrawn) The method of claim 13, further comprising identifying the next-in-line  $\mu$ OP as not critical if the next-in-line  $\mu$ OP does not satisfy the metric.

15. (Withdrawn) The method of claim 13, wherein the metric comprises comparing an age of the next-in-line  $\mu$ OP with a predefined threshold age.

16. (Withdrawn) The method of claim 13, wherein the metric comprises determining whether a thread associated with the next-in-line  $\mu$ OP has been given priority.

17. (Withdrawn) The method of claim 14, further comprising issuing a select signal, wherein the select signal indicates:  
if the next-in-line  $\mu$ OP is critical, that the next-in-line  $\mu$ OP is selected for output; and  
if the next-in-line  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of another input stream is selected for output.

18. (Withdrawn) A method comprising:  
accessing a next-in-line  $\mu$ OP of a front-door stream;  
comparing an age of the next-in-line front-door  $\mu$ OP with a predefined threshold age; and  
if the age of the next-in-line front-door  $\mu$ OP exceeds the threshold age, identifying the next-in-line front-door  $\mu$ OP as critical.

19. (Withdrawn) The method of claim 18, further comprising identifying the next-in-line front-door  $\mu$ OP as not critical if the age of the next-in-line front-door  $\mu$ OP is less than the threshold age.

20. (Withdrawn) The method of claim 18, wherein the threshold age corresponds to an oldest  $\mu$ OP .

21. (Withdrawn) The method of claim 18, wherein the next-in-line front-door  $\mu$ OP is associated with a thread, the method further comprising:  
determining whether the thread has been given priority; and  
if the thread does not have priority, identifying the next-in-line front-door  $\mu$ OP as not critical.

22. (Withdrawn) The method of claim 19, further comprising issuing a select signal, wherein the select signal indicates:  
if the next-in-line front-door  $\mu$ OP is critical, that the next-in-line front-door  $\mu$ OP is selected for output; and  
if the next-in-line front-door  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of a side-door stream is selected for output.

23. (Withdrawn) A method comprising:  
accessing a next-in-line  $\mu$ OP of a front-door stream, the next-in-line front-door  $\mu$ OP associated with a thread;  
determining whether the thread has been given priority; and  
if the thread has priority, identifying the next-in-line front-door  $\mu$ OP as critical.

24. (Withdrawn) The method of claim 23, further comprising identifying the next-in-line front-door  $\mu$ OP as not critical if the thread does not have priority.

25. (Withdrawn) The method of claim 23, further comprising:  
comparing an age of the next-in-line front-door  $\mu$ OP with a predefined threshold age; and  
if the age of the next-in-line front-door  $\mu$ OP is less than the threshold age, identifying the  
next-in-line front-door  $\mu$ OP as not critical.

26. (Withdrawn) The method of claim 24, further comprising issuing a select signal, wherein the select signal indicates:  
if the next-in-line front-door  $\mu$ OP is critical, that the next-in-line front-door  $\mu$ OP is  
selected for output; and  
if the next-in-line front-door  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of a side-door  
stream is selected for output.

Claims 27-30 (Canceled)

31. (Currently Amended) A device comprising  
a multiplexer having a ~~front-door~~ first input, a ~~side-door~~ second input, and an output;  
a scheduler coupled with the first input, the scheduler to provide a front-door stream to  
the multiplexer, the front-door stream including  $\mu$ OPs received from a replay  
loop; and  
a page miss handler coupled with the ~~side-door~~ second input, the page miss handler to  
provide a side-door stream to the multiplexer, the page miss handler to  
determine a criticality of a next-in-line  $\mu$ OP of the front-door stream, ~~and~~  
if the next-in-line front-door  $\mu$ OP is not critical, ~~wherein~~ place the next-in-  
line front-door  $\mu$ OP into the replay loop and place a next-in-line  
 $\mu$ OP of the side-door stream into the output of the multiplexer, and  
if the next-in-line front-door  $\mu$ OP is critical, place the next-in-line front-  
door  $\mu$ OP into the output of the multiplexer and hold the next-in-  
line side-door  $\mu$ OP.

32. (Currently Amended) The device of claim 31, ~~the page miss handler to~~  
~~place the next-in-line front-door  $\mu$ OP into the output of the multiplexer and hold the next-~~  
~~in-line side-door  $\mu$ OP if the next-in-line front-door  $\mu$ OP is critical~~ wherein the  
determination of the criticality of the next-in-line front door  $\mu$ OP is based on one or more  
metrics selected from a group consisting of an age of the next-in-line front door  $\mu$ OP and  
a priority of a thread associated with the next-in-line front door  $\mu$ OP.

33. (Currently Amended) The device of ~~claim 32~~ claim 31, the page miss handler to hold the next-in-line side-door  $\mu$ OP until a next clock cycle.

34. (Original) The device of claim 31, further comprising execution circuitry coupled with the output of the multiplexer.

35. (Original) The device of claim 31, the page miss handler to provide a select signal to another input of the multiplexer.

36. (Original) The device of claim 31, the page miss handler coupled with a whacking element, the whacking element to determine the criticality of the next-in-line front-door  $\mu$ OP.

37. (Withdrawn) A device comprising:  
a selector to receive an input stream; and  
a whacking element coupled with the selector, the whacking element to  
access a next-in-line  $\mu$ OP of the input stream,  
apply a metric to the next-in-line  $\mu$ OP, and  
if the next-in-line  $\mu$ OP satisfies the metric, identify the next-in-line  $\mu$ OP  
as critical.



38. (Withdrawn) The device of claim 37, the whacking element to identify the next-in-line  $\mu$ OP as not critical if the next-in-line  $\mu$ OP does not satisfy the metric.

39. (Withdrawn) The device of claim 37, the whacking element, when applying the metric, to compare an age of the next-in-line  $\mu$ OP with a predefined threshold age.

40. (Withdrawn) The device of claim 37, the whacking element, when applying the metric, to determine whether a thread associated with the next-in-line  $\mu$ OP has been given priority.

41. (Withdrawn) The device of claim 38, the whacking element to provide a select signal to the selector, wherein the select signal indicates:  
if the next-in-line  $\mu$ OP is critical, that the next-in-line  $\mu$ OP is selected for output; and  
if the next-in-line  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of another input stream is selected for output.

42. (Withdrawn) A device comprising:  
a multiplexer having a first input, a second input, and an output, the multiplexer to receive a front-door stream at the first input;  
a page miss handler coupled with the second input of the multiplexer, the page miss handler to provide a side-door stream to the multiplexer; and  
a whacking element coupled with the page miss handler, the whacking unit to access a next-in-line  $\mu$ OP of the front-door stream,  
compare an age of the next-in-line front-door  $\mu$ OP with a predefined threshold age, and  
if the age of the next-in-line front-door  $\mu$ OP exceeds a threshold age,  
identify the next-in-line front-door  $\mu$ OP as critical.

43. (Withdrawn) The device of claim 42, the whacking element to identify the next-in-line front-door  $\mu$ OP as not critical if the age of the next-in-line front-door  $\mu$ OP is less than the threshold age.

44. (Withdrawn) The device of claim 42, wherein the threshold age corresponds to an oldest  $\mu$ OP.

45. (Withdrawn) The device of claim 42, wherein the next-in-line front-door  $\mu$ OP is associated with a thread, the whacking element to:  
determine whether the thread has been given priority; and  
if the thread does not have priority, identifying the next-in-line front-door  $\mu$ OP as not critical.

46. (Withdrawn) The device of claim 43, the whacking element to provide a select signal to the multiplexer, wherein the select signal indicates:  
if the next-in-line front-door  $\mu$ OP is critical, that the next-in-line front-door  $\mu$ OP is selected for output; and  
if the next-in-line front-door  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of a side-door stream is selected for output.

47. (Withdrawn) A device comprising:  
a multiplexer having a first input, a second input, and an output, the multiplexer to receive a front-door stream at the first input;  
a page miss handler coupled with the second input of the multiplexer, the page miss handler to provide a side-door stream to the multiplexer; and  
a whacking element coupled with the page miss handler, the whacking element to access a next-in-line  $\mu$ OP of the front-door stream, the next-in-line front-door  $\mu$ OP associated with a thread,  
determine whether the thread has been given priority, and  
if the thread has priority, identify the next-in-line front-door  $\mu$ OP as critical.

48. (Withdrawn) The device of claim 47, the whacking element to identify the next-in-line front-door  $\mu$ OP as not critical if the thread does not have priority.

49. (Withdrawn) The device of claim 47, the whacking element to:  
compare an age of the next-in-line front-door  $\mu$ OP with a predefined threshold age; and  
if the age of the next-in-line front-door  $\mu$ OP is less than the threshold age, identify the next-in-line front-door  $\mu$ OP as not critical.

50. (Withdrawn) The method of claim 48, the whacking element to provide a select signal to the multiplexer, wherein the select signal indicates:  
if the next-in-line front-door  $\mu$ OP is critical, that the next-in-line front-door  $\mu$ OP is selected for output; and  
if the next-in-line front-door  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of a side-door stream is selected for output.

51. (Currently Amended) An article of manufacture comprising:  
a machine accessible medium providing content that, when accessed by a machine, causes the machine to  
determine a criticality of a next-in-line  $\mu$ OP of a ~~first input~~ front-door stream, ~~the~~  
front-door stream including  $\mu$ OPs received from a scheduler and a replay  
loop; and  
if the next-in-line  $\mu$ OP of the ~~first input~~ front-door stream is not critical, ~~discard~~  
place the next-in-line  $\mu$ OP of the ~~first input~~ front-door stream into the  
replay loop and place a next-in-line  $\mu$ OP of a ~~second input~~ side-door  
stream into an ~~output~~ execution stream; and  
if the next-in-line front-door  $\mu$ OP is critical, place the next-in-line front-door  $\mu$ OP  
into the execution stream and hold the next-in-line side-door  $\mu$ OP.

52. (Currently Amended) The article of manufacture of claim 51, wherein ~~the content, when accessed, further causes the machine to:~~  
~~if the next-in-line  $\mu$ OP of the first input stream is critical, place the next-in-line  $\mu$ OP of the first input stream into the output stream and hold the next-in-line  $\mu$ OP of the second input stream~~ the determination of the criticality of the next-in-line front door  $\mu$ OP is based on one or more metrics selected from a group consisting of an age of the next-in-line front door  $\mu$ OP and a priority of a thread associated with the next-in-line front door  $\mu$ OP.

53. (Currently Amended) The article of manufacture of claim 52, wherein the content, when accessed, further causes the machine to hold the next-in-line  $\mu$ OP of the ~~second input~~ side-door stream until a next clock cycle.

54. (Canceled)

55. (Withdrawn) An article of manufacture comprising:  
a machine accessible medium providing content that, when accessed by a machine,  
causes the machine to  
access a next-in-line  $\mu$ OP of an input stream;  
apply a metric to the next-in-line  $\mu$ OP; and  
if the next-in-line  $\mu$ OP satisfies the metric, identify the next-in-line  $\mu$ OP as  
critical.

56. (Withdrawn) The article of manufacture of claim 55, wherein the content,  
when accessed, further causes the machine to identify the next-in-line  $\mu$ OP as not critical  
if the next-in-line  $\mu$ OP does not satisfy the metric.

57. (Withdrawn) The article of manufacture of claim 55, wherein the content,  
when accessed, further causes the machine, when applying the metric, to compare an age  
of the next-in-line  $\mu$ OP with a predefined threshold age.

58. (Withdrawn) The article of manufacture of claim 55, wherein the content,  
when accessed, further causes the machine, when applying the metric, to determine  
whether a thread associated with the next-in-line  $\mu$ OP has been given priority.

59. (Withdrawn) The article of manufacture of claim 56, wherein the content, when accessed, further causes the machine to issue a select signal, the select signal to indicate:

if the next-in-line  $\mu$ OP is critical, that the next-in-line  $\mu$ OP is selected for output; and  
if the next-in-line  $\mu$ OP is not critical, that a next-in-line  $\mu$ OP of another input stream is selected for output.

60. (New) An apparatus comprising:

a scheduler to provide a front-door stream, the front-door stream including  $\mu$ OPs received from an instruction decoder and a replay loop; and

a page miss handler to provide a side-door stream, the page miss handler to

determine a criticality of a  $\mu$ OP in the front-door stream,

if the front-door  $\mu$ OP is not critical, place the front-door  $\mu$ OP into the

replay loop and place a  $\mu$ OP of the side-door stream into an execution stream, and

if the front-door  $\mu$ OP is critical, placing the front-door  $\mu$ OP into the execution stream and holding the side-door  $\mu$ OP.



61. (New) The apparatus of claim 60, wherein the determination of the criticality of the front-door  $\mu$ OP is based on one or more metrics selected from a group consisting of an age of the front-door  $\mu$ OP and a priority of a thread associated with the front-door  $\mu$ OP.

62. (New) The apparatus of claim 60, the page miss handler to hold the side-door  $\mu$ OP until a next clock cycle.